

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

REC'D 13 JUN 2005

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To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION

See paragraph 2 below

International application No.
PCT/IB2005/051001

International filing date (day/month/year)
23.03.2005

Priority date (day/month/year)
27.03.2004

International Patent Classification (IPC) or both national classification and IPC
H03M1/00

Applicant
KONINKLIJKE PHILIPS ELECTRONICS N.V.

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2005/051001

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 a sequence listing
 table(s) related to the sequence listing
 - b. format of material:
 in written format
 in computer readable form
 - c. time of filing/furnishing:
 contained in the international application as filed.
 filed together with the international application in computer readable form.
 furnished subsequently to this Authority for the purposes of search.
3. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2005/051001

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or
industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	2-29,31,32
	No: Claims	1,30,33
Inventive step (IS)	Yes: Claims	2-6
	No: Claims	1,7-33
Industrial applicability (IA)	Yes: Claims	1-33
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V.

1. Reference is made to the following document:

D1 = US2002/0041245

D2 = US4937578

2. The subject-matter of independent claims 1 and 30 does not meet the requirements of Article 33(2) PCT, because it lacks novelty over D1.

D1 (Figs. 2,9) discloses a digital-to-analog converter comprising a plurality of digital inputs (k bits) being used to select one of first and second binary voltage levels VH;VL as binary inputs to the converter, a respective capacitor circuit C, first and second clock inputs $\Phi 1$; $\Phi 2$, an output load C_{LOAD} , a plurality of switches controlled by the clock inputs 6, wherein a plurality of the capacitor circuits are controllable to output an effective voltage to the load comprising the first binary voltage, the second binary voltage or an average of the first and second binary voltage levels (paragraph 73) in dependence of the bits of the digital input word (implicit). Hence, the subject-matter of claims 1 and 30 is not novel.

3. The subject-matter of independent claim 33 does not meet the requirements of Article 33(2) PCT, because it lacks novelty over D1.

D1 (Fig. 12; paragraphs 10 and 74) discloses an active matrix liquid crystal display comprising the digital-to-analog converter mentioned above (point 2). Said display further comprises a scan driver for the rows 13, a column data driver 14 and an array of display pixels 10. Hence, the subject-matter of claim 33 is not novel.

4. The subject-matter of dependent claim 2 does not appear to be known from the available prior art documentation.
5. The features set out in dependent claims 7-10,15-17,20-22,24-29,31 and 32 are either known from the cited prior art or relate to usual matters of design which are unable to lend inventive step to the independent claims, Articles 33(2) and (3) PCT.

In particular:

Claims 21,24,25,31: D1 discloses a resistor chain (Figs. 1 and 8).

Claims 7-10,12,23: The subject-matter of these claims merely relates to alternative topologies and control using the digital input data. As an example, D2 (Figs. 4a, 4b and 7) shows an alternative architecture.

Re Item VIII.

1. The application does not meet the requirements of Article 6 PCT, because it is unclear in claim 1 (lines 6-7) which input is intended by the expression "each input".
Claim 1 refers to both binary inputs and digital inputs (lines 1-4).